

**BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE
(AUTONOMOUS)**

III - B.TechII-Semester Regular Examinations (BR23), MAY - 2026

**ENVIRONMENTAL ENGINEERING
(CIVIL ENGINEERING)**

Time: 3 hours

Max. Marks: 70

*Question Paper consists of Part-A and Part-B
Answer ALL the question in Part-A and Part-B*

PART-A (10X2 = 20M)

	Marks	CO	BL
1. a) Define design period and write about its significance.	(2M)	CO1	BL1
b) Distinguish between gravity and pumping water supply systems.	(2M)	CO1	BL4
c) What is equivalent pipe method?	(2M)	CO2	BL1
d) What is residual chlorine?	(2M)	CO2	BL1
e) Define filtration rate.	(2M)	CO3	BL1
f) What is ion exchange process?	(2M)	CO3	BL1
g) Define population equivalent.	(2M)	CO4	BL1
h) Define self-cleansing velocity.	(2M)	CO4	BL1
i) What is UASB reactor?	(2M)	CO5	BL1
j) What is sewage farming?	(2M)	CO5	BL1

PART-B (5X10 = 50M)

2a. Explain factors affecting water demand and their variations in detail.	10(M)	CO1	BL2
(OR)			
3a. Compare surface and subsurface water sources with respect to suitability and quality.	10(M)	CO1	BL4
4a. Explain physical, chemical, and biological characteristics of water in detail.	10(M)	CO2	BL2
(OR)			
5a. Explain IS drinking water standards and their importance.	10(M)	CO2	BL2
6a. Explain the working and design principles of sedimentation tanks.	10(M)	CO3	BL2
(OR)			
7a. Discuss advanced water treatment methods: reverse osmosis and ultrafiltration.	10(M)	CO3	BL6
8a. Explain the design considerations of sanitary sewer systems.	10(M)	CO4	BL2
(OR)			
9a. Discuss characteristics and composition of sewage in detail.	10(M)	CO4	BL6
10a. Explain oxygen sag curve and Streeter-Phelps equation conceptually.	10(M)	CO5	BL2
(OR)			
11a. Describe various methods of sewage disposal with advantages and limitations.	10(M)	CO5	BL1
